



*A student at Kammerer Middle School in Jefferson County connects learning experiences. Photo by Rick McComb*



# Goal 6: Connect and Integrate Knowledge

## Academic Expectation

**6.1:** Students connect knowledge and experiences from different subject areas.

**Learning Links:** News Reporting, Hobbies, Decision Making, Pollution, Government, Nutrition, Advocacy, Patterns, Theater, Marketing, Media, Economics

<i>Elementary Demonstrators</i>	<i>Middle School Demonstrators</i>	<i>High School Demonstrators</i>
		

Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

- Use the knowledge and experiences from one subject area to form an explanation and then extend that explanation by making connections with knowledge and experiences from another subject area
- Illustrate the connections of knowledge and experiences between/among different subject areas
- Examine relevant facts and/or information from different subject areas needed to make a decision
- Recognize facts or information from a subject area to make a decision
- Defend a position based on information from a variety of subject areas.
- Determine the relationship among learning strategies, processes, experiences, and/or knowledge across various subject areas
- Analyze facts or information from a variety of subject areas to make a decision
- Explain an event using knowledge and experiences from several subject areas
- Justify a solution or course of action for a complex issue by accessing information from different subject areas.
- Evaluate the consequences of ideas and actions by connecting knowledge and experiences in different subject areas.
- Interpret or analyze different perspectives of an event to determine the influence of different subject areas
- Demonstrate understanding of a complex ideas or event from perspectives of different subject areas

## Sample Teaching/Assessment Strategies:

**Foundation Strategies:** Activating Prior Knowledge • **Continuous Progress Assessment:** Observations, Performance Events/Exhibition; Portfolio Development, Self-Assessment/Reflection • **Community-Based Instruction:** Field Studies, Networking, Service Learning, Shadowing • **Graphic Organizers:** Compare/Contrast Structures, Venn Diagrams, Matrices, Graphic Representations, Mapping, Webbing • **Problem Solving/Process:** Inquiry/Investigation/Experimentation, Creative Problem Solving • **Technology:** Computer Utility, Design, Manipulative • **Whole Language Approach** • **Writing**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

## Ideas for Incorporating Community Resources:

### Process

- Attend a local planning meeting to see how issues are viewed through different subject areas.
- Interview a local newspaper reporter about factors that have to be addressed in compiling information gained from multiple sources.
- Partner with citizens having different training/occupations to determine how knowledge and experiences have influences their perspectives on a local issue.

# Core Concept:

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## Sample Elementary Activities



- Investigate an issue of concern at school (e.g., the temperature changes in different classrooms, the condition of playground equipment, the recycling of white paper). Examine how things you have done in the past make a difference about how you think and feel about the issue now. OE, P
- Interview family members or neighbors to study differences in job responsibilities. Find out how classes in school are related to their jobs. PE, OE, P
- Create a product or solution to help a physically challenged person in a specific situation (e.g., how to open a tight lid if you have arthritis in your hands, how to reach things on a high shelf if you are in a wheelchair, how to communicate map directions to blind person). PE, OE
- Create examples of how you might teach someone about magnetism by using art, music, or drama. PE

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## Sample Middle School Activities



- Research information on a specific environmental problem (e.g., ground water pollution, solid waste disposal, automotive emissions); research the problem from different perspectives (e.g., concerned citizens from different areas of town, government officials, local business owner, school official, children, business persons representing different solutions). Simulate a government council meeting and role-play alternative solutions to the conflict. PE, P
- Create and perform a musical, dramatic, or artistic presentation showing how the study of patterns and systems is important for understanding three different subject areas (e.g., science, mathematics, social studies, physical education, language, vocational studies). PE, P
- Develop criteria for locating a new gasoline station or fast food restaurant in your community. Interview a proprietor, government official, environmentalist, and several neighborhood residents to identify the criteria they would use to make a recommendation. Make a decision for the new location based on your criteria. PE, OE, P
- Design a pamphlet advertising a special school event. Apply knowledge from different subject areas to make the event appealing to a broad audience. PE, P

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## Sample High School Activities



- Debate the solution to a community issue (e.g., land fill, new health facilities, recreational center, new interstate highway) after analyzing the impacts of the issue (e.g., economic, aesthetic, occupational, environmental). PE, OE, P
- Evaluate the educational impact of House Bill 940 (Kentucky Education Reform Act) on you and your school. OE, P
- Develop a plan describing the process for making a major consumer purchase (e.g., car, home, college education, vacation) using knowledge gained from a variety of classes (e.g., mathematics, communication, technology, science, history, geography, vocational, health). OE, P
- Accept/Reject the pros and cons from various perspectives (e.g., health care worker, doctor, insurance companies, small business owners, corporate employer, politicians) relating to the proposed national health bill mandating universal coverage. OE, P

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## Reflections



- *"This is science class. Why are you grading our spelling and writing?" "How come I have to know all about measuring if this is art?" Being able to connect information and skills, being able to use the same information in a variety of challenging problems, and being able to apply skills whenever the need arises are fundamental components of life-long learning. Adults know that life is not neatly compartmentalized, and that knowledge crosses over from one area to another. Students making connections between subject areas are beginning along the path of life-long learning.*

# Goal 6: Connect and Integrate Knowledge

## Academic Expectation

**6.2:** Students use what they already know to acquire new knowledge, develop new skills, or interpret new experiences

**Learning Links:** Experimentation / Metaphor / History / Exploration / Space / Games / Technology / Science Fiction / Composition / Invention / Market Studies

<i>Elementary Demonstrators</i>	<i>Middle School Demonstrators</i>	<i>High School Demonstrators</i>
		

Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

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|--|---|---|
| <ul style="list-style-type: none"> <li>• Make predictions based on information.</li> <li>• Explore strategies which promote relationships between prior knowledge and information.</li> <li>• Identify strategies used to acquire existing knowledge.</li> <li>• Connect knowledge with past experiences.</li> </ul> | <ul style="list-style-type: none"> <li>• Interpret information to infer relationships and apply to new situations.</li> <li>• Evaluate strategies used to relate new information to prior knowledge and experience.</li> <li>• Select an appropriate strategy to acquire specific new information.</li> </ul> | <ul style="list-style-type: none"> <li>• Select and implement appropriate strategies to extend knowledge, skills, and experiences.</li> </ul> |
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## Sample Teaching/Assessment Strategies: \_\_\_\_\_

**Collaborative Process:** Cooperative Learning, Reciprocal Teaching • **Community-Based Instruction:** Field Studies, Mentoring/Apprenticeship/Co-op, Service Learning, Shadowing • **Continuous Progress Assessment:** Observation, Performance Events/Exhibitions • **Problem Solving:** Inquiry, Creative Problem Solving, Future Problem Solving, Interview/Polls, Research • **Technology/Tools:** Distance Learning, Interactive Video, Manipulatives, Puppets, Telecommunications • **Whole Language Approach** • **Writing Process**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

## Ideas for Incorporating Community Resources: \_\_\_\_\_

- Invite a professor from a local college or university to discuss the research base for recent scientific discoveries.
- Invite a local physician or agronomist to discuss strategies used to gain new knowledge about their field.
- Interview a pollster with the local paper to discover how information obtained on surveys is used to interpret events and positions.



# Core Concept: Developing New Knowledge

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## Sample Elementary Activities



- Play a new board game without reading the directions. Use your past knowledge of games to make up rules. Evaluate your rules against the rules with the game. PE, OE
- Interview a wide range of people of different ages about the changes they have seen in communication. Predict future changes. PE, OE
- Draw a picture of an event which occurred at your house. Determine how you decided what to put in the picture. Use the same selection process to develop an outline for a story. Write the story. P

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## Sample Middle School Activities



- Use the scientific method to investigate the relationship between watching television and performance in school. Make predictions based on findings. PE, P
- Identify the skills necessary to successfully operate your favorite video game. Using that information, design a how-to manual for an unfamiliar video/computer game. PE
- Examine several accounts of pioneer survival in American history. Write a science fiction story about pioneers on the first exploration of Mars. OE, P

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## Sample High School Activities



- Invest and manipulate a portfolio beginning with \$10,000 to achieve the greatest growth over a 3-month period. Track the performance of your investment on a computer spreadsheet. PE, OE, P
- Prepare a new recipe for your family based on personal taste, known chemical properties in the food, and food preparation. PE, OE, P
- Stage a “sleuthing party” in which participants begin with some known information and are given clues throughout the party. Write a reflection which examines and evaluates the process you used to solve the mystery. OE, P

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## Reflections



*If students are to become lifelong learners, they must learn how to learn. They must learn to go from what they know to what they do not know. They must recognize differences in strategies used to acquire new knowledge and skills, and be able to apply those strategies to new situations.*

*If students can apply the processes of learning, they will be able to take charge of their own learning. Being able to ask probing questions is also important to continuing the process.*

*A story about a Nobel Prize-winning physicist is an example of an inquiring mind. When a reporter asked him why he had become a scientist, the physicist answered, “As a young child, my mother never asked, ‘What did you do in school today?’ Instead, she always inquired, ‘Did you ask a good question today?’” The physicist explained that this expectation to wonder probably led him into the inquiring world of science.*

# Goal 6: Connect and Integrate Knowledge

## Academic Expectation

**6.3:** Students expand their understanding of existing knowledge by making connections with new knowledge, skills, and experiences.

**Learning Links:** Apprenticeship / Market Analysis / Analogies / Synergy / Creativity / Experiments / Hypothesis / Teaching / Strategic Planning / Risktaking / Adventure / Theories / Creative Arts

<i>Elementary Demonstrators</i>	<i>Middle School Demonstrators</i>	<i>High School Demonstrators</i>
		

Demonstrators should be read from bottom to top, but need not be demonstrated sequentially.

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>• Describe relationships among objects, ideas, and actions.</li> <li>• Develop generalizations based on data regarding relationships among objects, ideas, and actions.</li> <li>• Relate new information to specific knowledge, skills, or experiences.</li> </ul> | <ul style="list-style-type: none"> <li>• Analyze the connections between new and existing knowledge in specific situations.</li> <li>• Discover relationships among existing knowledge and new ideas, objects, and actions.</li> </ul> | <ul style="list-style-type: none"> <li>• Examine and revise existing knowledge, skills, and experiences based upon connections with new knowledge, skills, or experiences.</li> <li>• Apply new knowledge from multiple sources to expand understanding of existing knowledge.</li> </ul> |
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## Sample Teaching/Assessment Strategies: \_\_\_\_\_

**Community-Based Instruction:** Field Studies, Mentoring/Apprenticeship/Co-op, Networking, Service Learning, Shadowing  
**• Continuous Progress Assessment:** Portfolio Development • **Graphic Organizers:** Advance Organizers • **Problem Solving:** Case Studies, Future Problem Solving, Oral History, Research, Inquiry, Brainstorming • **Technology Tools:** Manipulatives, Computers, Distance Learning, Telecommunications • **Whole Language Approach** • **Writing Process**

These sample strategies offer ideas and are not meant to limit teacher resourcefulness. More strategies are found in the resource section.

## Ideas for Incorporating Community Resources: \_\_\_\_\_

- Invite a doctor to discuss the need to keep current with new developments in medicine in order to treat patients.
- Attend town council meetings to examine the ways specific information impacts the interpretations and actions taken on a local issue.
- Ask a detective how new information contributes to solving cases.

# Core Concept: Expanding Existing Knowledge

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## Sample Elementary Activities



- Describe ways in which a city and a jungle are alike. Make a pictorial presentation of your findings. PE, OE, P
- Wear a blindfold around school for a morning. Afterward, write a story which shows what it would be like to be blind in school and draw a map of the building which shows hazards for blind people in school. PE, P
- Find a cartoon in the newspaper which prevents a situation similar to one in which you have been involved. Explain how the cartoon gives you a different perspective on the real situation. OE, P

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## Sample Middle School Activities



- Determine the buying patterns of your friends or family. Interview the display designer at your favorite store to discuss the reasons for the placement and design of displays. Analyze the buying patterns of the identified group to determine if there is a correlation between the display location and buying practices. PE, P
- Analyze the lyrics from current rap songs to better understand social conditions in the United States. PE, OE
- Study customs from the Middle Ages to better understand contemporary social behaviors. Design a graphic presentation of the connections. OE, P

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## Sample High School Activities



- Investigate recent developments in biotechnology and predict their applications to the problem of world hunger. OE
- Visit a local shopping mall. Describe in a presentation how a high school is like a shopping mall and make recommendations for improving the effectiveness or atmosphere of the school. PE, P
- Determine how applied science has been a historical force in the development of modern civilization. Present your findings to the class. PE, OE, P

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## Reflections



*Expanding knowledge by making connections between new information and old knowledge is a fundamental part of learning. It is the essence of the research and investigative processes required of students. It provides students with a method for seeing existing knowledge from new perspectives. Progress and innovation in society depend on this skill.*

*One way to develop this skill is to look at an existing situation or work with a familiar idea from new and different perspectives. Students must become self-directed learners who expand existing knowledge as they develop strategies for learning, use those strategies to learn new information, and expand and revise their current ideas based on the new information.*